POLYMERIC GLOVE WITH LOTION COATING AND METHOD OF MAKING SAME

FIELD OF THE INVENTION

The present invention is directed to disposable gloves. More particularly, the present invention is directed to disposable gloves that have a coating on the inner surface of the glove that facilitates donning of the glove and also provides protective, soothing and healing ingredients for skin. A method of making the gloves is also disclosed.

BACKGROUND OF THE INVENTION

Disposable gloves are frequently worn for extended periods of time by medical and industrial personnel. Due to the non-porous and close fitting nature of these gloves, wearing them for long periods of time frequently results in sweating of the hands. Gloves containing powders or other polymeric donning coatings tend to further dry the hands by wicking moisture away from the hands. This loss of moisture is not conducive to good hand skin health. Furthermore, since medical and industrial laboratory personnel are frequently washing their hands, hands can often become dry, chapped, cracked, red and/or irritated. Thus, a disposable glove that provides protective, soothing and healing ingredients for skin, both during and after use, has long been sought.

U.S. Patent No. 6,274,154 attempts to solve these problems. This patent discloses a moisturizing glove that includes a thin layer of Aloe Vera evenly coated on the inside surface of the glove. The Aloe Vera coating is dehydrated. Specifically, the Aloe Vera coating is formed by immersing, spraying or dipping the glove in an Aloe Vera solution preferably made from 100% Aloe Vera gel and water so as to have a preferred concentration of about 20% Aloe Vera. The solution is then dehydrated to form the Aloe Vera coating. The patent specifically discussed the disadvantages derived from using oil-based substances for the coating material.

In accordance with the present invention, it has been found that a glove having a coating on the inner surface which coating comprises a film-forming

compound and a oil-based emollient provides protective, soothing and healing ingredients for skin, both during and after wearing of the glove.

SUMMARY OF THE INVENTION

The present invention is directed to disposable gloves. The glove comprises a polymeric or elastomeric material and having an inside surface for contacting the skin of a wearer. The glove further comprises a dried coating formed on the inside surface thereof. This coating comprises a film forming compound and an oil-based emollient.

In an alternate embodiment, there is disclosed a method of making a glove. The method comprises forming a coating on the inner surface of a polymeric or elastomeric glove. The coating comprises a film forming compound and an oil-based emollient. The coating is then dried.

In another embodiment, there is disclosed an alternate method of making a glove. The method comprises placing a polymeric or elastomeric glove on a glove form. Dipping the glove into a bath of a coating formulation so that a coating is formed on the surface of the glove. The coating formulation comprises a film forming compound and an oil-based emollient. The coating on the glove is then dried. And, the glove is removed from the form so that the dried coated surface of the glove is on the inner surface.

In another embodiment, there is disclosed an alternate method of making a glove. The method comprises applying a coating formulation to the surface of the glove to form a coating thereon. The coating formulation comprises a film forming compound and an oil-based emollient. The coating on the glove is then dried. And, the glove is oriented so that the dried coated surface of the glove is on the inner surface thereof.

Accordingly, it is an object of the present invention to provide an improved disposable glove.

Another object of the present invention is to provide a glove that provides protective, soothing and healing ingredients for skin, both during and after wearing of the glove.

A further object of the present invention is to provide a glove that is relatively easy to don.

These and other objects, features and advantages of the present invention will become apparent after a review of the following detailed description of the disclosed embodiments and the appended claims.

DETAILED DESCRIPTION OF THE DISCLOSED EMBODIMENTS

The present invention comprises a polymeric or elastomeric glove; particularly, a disposable polymeric or elastomeric glove, such as those used by medical personnel for examination and treatment of patients, by dentists and dental hygienists, by doctors and nurses, and the like. These same gloves are also used in industrial applications. Such gloves are well known in the art and the particular construction of the gloves is not critical to the present invention, except to the extent that the coating formulation of the present invention and the polymer from which the glove is made must be compatible such that the coating formulation will adhere to the glove and will not degrade the polymer from which the glove is made.

The polymeric or elastomeric glove of the present invention can be made from natural latex, acrylonitrile, butadiene rubber, neoprene, isoprene, polychloroprene, or copolymers, blends and mixtures thereof. U.S. Patent Nos. 6,274,154 and 5,014,362 disclose polymeric or elastomeric gloves useful in the present invention as well as a method of making such a glove. U.S. Patent Nos. 6,274,154 and 5,014,362 are all incorporated herein by reference.

The coating formulation can be added to the glove as a part of a continuous manufacturing process. Alternately, the coating formulation can be added to the glove after the glove has completed the manufacturing process. Therefore, it would be possible to add the coating formulation of the present invention to polymeric gloves manufactured by a third party.

The coating formulation of the present invention, in its simplest form, comprises an aqueous solution or suspension of a film-forming compound and an oil-based emollient. Film-forming compounds useful in the present invention preferably include, but are not limited to, polyurethane, acrylonitrile, Neoprene, acrylic latex, styrene butadiene rubber (SBR), and polisoprenecal. An especially preferred film-forming compound is an aqueous, anionic, and aliphatic dispersion of polyurethane with a particle size of less than 5 microns and an ultimate elongation of greater than 600%. The film-forming compound is present in the coating formulation of the present invention at a rate effective to form an

elastic coating on the glove; preferably at the rate of approximately 60 parts to 100 parts by weight; especially, approximately 70 parts to 90 parts by weight.

Oil-based emollients useful in the present invention preferably include, but are not limited to, petrolatum, cetyl alcohol, C12-15 alkyl benzoate, cyclomethicone or wax emulsifiers, such as cetearyl alcohol, and Ceteareth 20. Many other similar oil-based emollients may also be used. The oil-based emollient is present in the coating formulation of the present invention at a rate effective to provide moisturizing, soothing or healing benefits to the skin of the wearer; preferably at the rate of approximately 5.6 parts to 9.7 parts by weight; especially, approximately 3.05 parts to 11.5 parts by weight.

In addition to the film-forming compound and the oil-based emollient, the coating formulation of the present invention desirably includes one or more of the following ingredients: lubricants, thickening agents, preservatives, antimicrobials, skin softeners, antioxidants, emulsifiers and vitamin supplements.

Lubricants useful in the present invention preferably include, but are not limited to, C12-C15 alkyl benzoate, cyclomethicone and Ceteareth 20. Lubricants are present in the coating formulation of the present invention at the rate of approximately 2 parts to 7 parts by weight; preferably, approximately 4 parts to 6 parts by weight.

Thickening agents useful in the present invention preferably include, but are not limited to, Carbomer and Carbomer 934, 940 & 941, polyvinyl alcohol, carboxymethyl cellulose, hydroxymethyl cellulose, poly acrylate thickeners, and polyethylene oxide. Thickening agents are present in the coating formulation of the present invention at the rate of approximately 0.2 parts to 1 part by weight; preferably, approximately 0.4 parts to 0.6 parts by weight.

Preservatives useful in the present invention preferably include, but are not limited to, methyl paraben, propyl paraben Proxcel GXl, Vancide TH, butyl paraben, DMDM hydantoin, and ethyl paraben. Preservatives are present in the coating formulation of the present invention at the rate of approximately 0.05 parts to 0.3 parts by weight; preferably, approximately 0.08 parts to 0.25 parts by weight.

Vitamin supplements useful in the present invention preferably include, but are not limited to, tocopheral acetate, magnesium ascorbyl phosphate, vitamin A, retinal palmitate, retinyl acetate, Cetyl PG, hydroxyethyl palmitamide. Vitamin supplements are present in the coating formulation of the present invention at the rate of approximately

0.005 parts to 0.15 parts by weight; preferably, approximately 0.008 parts to 0.15 parts by weight.

Antimicrobials useful in the present invention preferably include, but are not limited to, methyl paraben and propyl paraben. Antimicrobials are present in the coating formulation of the present invention at the rate of approximately 0.05 parts to 0.3 parts by weight; preferably, approximately 0.08 parts to 0.25 parts by weight.

Skin softeners useful in the present invention preferably include, but are not limited to, glycerine and glyceral oleate, allantoin, aloe barbadensis, bees wax, chamomilla recutita (mattricaria) extract, cocoa butter, collagen, amino acids, colloidal oatmeal, everlasting extract, glycine soja (soybean) sterols, helianthus anuus (sun flower) seed oil, lanolin, palm (elais guineenis) oil, persea gratissima (avocado oil), primula verus extract, sun flower seed oil, and wheat germ oil. Skin softeners are present in the coating formulation of the present invention at the rate of approximately 0.2 parts to 0.7 parts by weight; preferably, approximately 0.4 parts to 0.6 parts by weight.

Antioxidants useful in the present invention preferably include, but are not limited to, tocopherol, tocopheral acetate, and tocopheryl linoleate. Antioxidants are present in the coating formulation of the present invention at the rate of approximately 0.05 parts to 0.15 parts by weight; preferably, approximately 0.08 parts to 0.12 parts by weight.

Emulsifiers useful in the present invention preferably include, but are not limited to, cetearyl alcohol, cetyl alcohol, stearic acid, lethicin, stearyl alcohol, cetearyl ethylhexanoate, and cetyl acetate. Emulsifiers are present in the coating formulation of the present invention at the rate of approximately 1 part to 3 parts by weight; preferably, approximately 1.5 parts to 2.5 parts by weight.

A typical coating formulation may contain the following ingredients in the range of concentrations indicated. All ranges are in parts by weight.

Part A

Material	Range	Preferred
Water	20-40	32-37
Carbomer	0.2-1.0	0.4-0.6
C12-15 Alkyl Benzoate	2.0-7.0	4.0-6.0
Ceteareth 20	1.0-5.0	2.0-3.0
Cetyl Alcohol	2.0-3.0	2.3-2.7
Cetearyl alcohol	1.0-5.0	1.5-2.5
Dimethicone	0.2-1.0	0.4-0.6
Methyl Paraben	0.1-.3	0.15-0.25
Retinyl Palmitate	.005-.015	0.008-0.15
Tocopheral Acetate	.05-.15	0.08-.12
Cyclomethicone	0.2-0.7	0.4-0.6
Glycerine	1.0-3.0	1.5-2.5

Part B

Material	Range	Preferred
Water	20-40	32-37
Petrolatum	2.0-7.0	4.0/6.0
Propyl paraben	.05-.15	.08-.12
Stearic Acid	0.2-0.7	0.4-0.6
Magnesium Ascorbyl Phosphate	.05-.015	0.08-.12
Lethicin	0.2-0.3	0.23-0.27

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Part C

Material	Range	Preferred
Water	700-1400	800-1200
Witco 506	60.0-100.0	70.0-90.0
Part A&B	2.0-8.0	2.5-7.0

The coating formulation of the present invention can be applied to polymeric or elastomeric glove by any suitable method, such as by spraying, dipping, drum coating, and the like. As stated above, the gloves can be coated in a continuous manufacturing process or after the gloves have been completely manufactured. If it is desired to coat the gloves in a continuous manufacturing process, the glove should be coated when the polymer or elastomer is in the wet gel stage or dried.

It is preferred that the coating formulation be applied to the polymeric or elastomeric glove by dipping the glove in a coating bath. This is may be done by placing the coating formulation in a tank. The gloves, which are typically mounted on a glove form, are inverted so that the fingers of the glove extend downwardly. The glove is then immersed into the coating formulation and withdrawn at a constant speed. The length of time that the glove is in the coating formulation and the exit speed may be varied depending upon the desired pick up weight. Generally, it is desired that the pick up weight of the coating formulation of the present invention should be approximately 0.5 grams to 0.7 grams; preferably approximately 0.4 grams to 0.7 grams. An 11 second withdrawal speed from the cuff to the fingertips of the glove is typical.

If it is desired to apply the coating formulation of the present invention to gloves that are already manufactured, the coating formulation may be applied to the gloves by tumbling the gloves in the coating formulation in a rotating drum. The gloves are then drained and processed off line in commercial heated dryers.

The coating formulation on the polymeric or elastomeric glove may be dried in any suitable fashion known in the art. If the coating formulation is applied by dipping, the dipped coating is generally dried onto the glove while the glove is still mounted on a glove form at temperatures ranging from approximately 160° F to 215° F. However, the drying time and temperature is dependent upon the glove being made and the desired properties of the glove. The coating may be exposed to temperatures much higher (260° F) for reasons unrelated to the coating. Drying may be accomplished by placing the coated glove on the glove form in a forced air oven. However, tumbling in a heated dryer will allow higher temperatures to be used to speed the drying process. Alternately, the coating on the glove can be partially dried while the glove is on the glove form and then final drying can be done in a tumbling heated dryer.

In both the dipping and the tumbling coating process, the coating formulation is applied and dried on the outer surface of the glove. In order for the coating

formulation to benefit the hand skin of the wearer, the coating formulation must be on the inside surface of the glove; *i.e.*, the surface of the glove that contacts the skin on the hand of the wearer. Therefore, after the coating on the glove has been dried, it is necessary to turn the gloves inside out so that the coated surface is on the inside of the glove. If the coating is applied in a continuous manufacturing process, the reversal of the glove can be done when the dried, coated glove is removed from the glove form.

The present invention is further illustrated by the following examples, which are not to be construed in any way as imposing limitations upon the scope thereof. On the contrary, it is to be clearly understood that resort may be had to various other embodiments, modifications, and equivalents thereof which, after reading the description herein, may suggest themselves to those skilled in the art without departing from the spirit of the present invention and/or the scope of the appended claims.

EXAMPLE 1

Preparation of the coating composition

Table I lists various ingredients used in this Example along with their definitions.

TABLE I

Material	Definition
C12-C15 Alkyl Benzoate	Emollient and lubricant.
Carbomer	Carbomer is a synthetic compound comprised of a cross-linked polymer of acrylic acid with a high molecular weight. The function of carbomer is to act as an emulsion stabilizer and to adjust viscosity and can therefore also be classed as a thickening agent.
Ceteareth 20	Formulated waxes that can serve as complete emulsifier systems. Useful in oil-in-water emulsions such as creams, lotions, and ointments. The completely nonionic waxes are stable in both acid and alkaline formulations and are compatible with cationic ingredients

Cetearyl alcohol	Formulated wax that can serve as complete emulsifier systems. Useful in oil-in-water emulsions such as creams, lotions, and ointments. The completely nonionic wax is stable in both acid and alkaline formulations and is compatible with cationic ingredients.
Cetyl Alcohol	1-hexadecanol, hexadecanol, hexadecan-1-ol, hexadecyl alcohol, cetal, cetylol, n-hexadecyl alcohol, palmityl alcohol. Use: cosmetic ingredient, emollient, foam stabilizer, water evaporation retardant. Molecular formula: $C_{16}H_{34}O$. CAS No: 36653-82-4. EINECS No: 253-149-0.
Cyclomethicone	An emollient and lubricant. Silicone polymer sourced from silica, from sands. This produces an excellent skin conditioning, emollient and lubricant. Non-greasy, it reduces friction and is highly skin protective.
Dimethicone	A silicone-based spreader. Synonyms: silicone rubber, silicone latex, latex, dimethyl silicone, simethicone, dimethyl polysiloxane, dermafilm, silbar, dimethicream, poly(dimethylsiloxane), methyl silicone, dimethicone 350, good-rite, gum, hycar, poly(oxy(dimethylsilylene)). Molecular formula: $[-Si(CH_3)_2O-]_n$. CAS No: 9016-00-6
Glycerine	Skin softener.
Lethicin	Surfactant, fat emulsifier.
Magnesium Ascorbyl Phosphate	Magnesium L-Ascorbic acid-2-phosphate(MAP) is a kind of water-soluble whitening agent, and it can catch free oxygen radical to accelerate the formation of collagen. CAS # 108910-78-7.
Methyl Paraben	A preservative. Methyl 4-Hydroxybenzoate.

Petrolatum	A colorless to yellowish-white hydrocarbon mixture obtained by fractional distillation of petroleum. In its jellylike semisolid form (known as petroleum jelly) it is used in preparing medicinal ointments and for lubrication. As a nearly colorless, highly refined liquid known as liquid petrolatum, liquid paraffin, or mineral oil, it is used as a lubricant, as a laxative, and as a base for nasal sprays.
Propyl Paraben	Propyl 4-hydroxybenzoate and is used as a preservative.
Retinyl Palmitate	Source of vitamin A.
Stearic Acid	Synonyms: n-octadecanoate; 1-heptadecanecarboxylic acid; stearophanic acid; n-octadecylic acid; cetylacetic acid; barolub fta; century 1210; century 1220; century 1230; century 1240; dar-chem 14; emersol 120; emersol 132; emersol 150; emersol 153; emersol 6349; formula 300; glycon dp; glycon s-70; glycon s-80; glycon s-90; glycon tp; groco 54; groco 55; groco 55l; groco 58; groco 59; humko industrene r; hydrofol acid 150; hydrofol acid 1655; hydrofol acid 1855; hydrofol 1895; hy-phi 1199; hy-phi 1205; hy-phi 1303; hy-phi 1401; hystrene 80; hystrene 4516; hystrene 5016; hystrene 7018; hystrene 9718; hystrene s 97; hystrene t 70; industrene 5016; industrene 8718; industrene 9018; industrene r; kam 1000; kam 2000; kam 3000; loxiol g 20; lunac s 20; naa 173; neo-fat 18; neo-fat 18-s; neo-fat 18-53; neo-fat 18-54; neo-fat 18-55; neo-fat 18-59; neo-fat 18-61; PD 185; pearl stearic; promulsin; proviscol wax; stearex beads; tegostearic 254; tegostearic 255; tegostearic 272; vanicol. CAS #57-11-4.
Tocopheral Acetate	Source of vitamin E.
Water	Deionized or soft water.
Witco 506	An aqueous, anionic, and aliphatic dispersion of polyurethane with a particle size of less than 5 microns and an ultimate elongation of greater than 600%. The urethane is hydrophilic in nature.

Table II lists the manufacturer or commercial source for each of the ingredients listed above in Table I.

TABLE II

Ingredient	Source	Address
Carbomer	Rita Corporation	Woodstock, IL 60098
C12-15 Alkyl Benzoate	Degussa	Hopewell, Virginia 23860
Ceteareth-20	BASF Corp	Mount Olive, NJ 07828-1234
Cetearyl Alcohol	Rita Corporation	Woodstock, IL 60098
Cetyl Alcohol	Acme –Hardesty Products	Blue Bell, PA 19422
Dimethilcone	A&E Connock Company	Hampshire, England
Methyparaben	Acme-Hardesty Products	Blue Bell, PA 19422
Retinyl palmitate	BASF Corp	Mount Olive, NJ 07828-1234
Tocopheral Acetate	A&E Connock Company	Hampshire, England
Petrolatum	Penreco	Houston, Texas 77002
Propylparaben	Acme-Hardesty Products	1787 Sentry Parkway West Blue Bell, PA 19422
Stearic Acid	Acme-Hardesty Products	Blue Bell, PA 19422
Magnesium Ascorbyl Phosphate	Optima Specialty Chemical Co	Huntington, CT 06484
Lethicin	Optima Specialty Company	Huntington, CT 06484
Witco 506	Crompton Corp	Middlebury, CT 06749

The coating formulation is made in a series of three steps, as described further below. Part "A" is a mixture of emollients, lubricants, thickening agents, preservatives, antimicrobials, skin softeners, antioxidants and vitamin supplements. These ingredients act as the foundation of the moisturizing system. A thickener, preferably Carbomer, is added to help prevent the settling of other ingredients as they are added by changing the density of the water once the solution cools. Water, preferably deionized or soft water, is used to bring the ingredients in to solution by dissolving or dispersing the other ingredients. C12-C15 alkyl benzoate, cyclomethicone and Ceteareth 20 act as emollients and lubricants. Cetearyl alcohol and Cetyl Alcohol are emollients and nonionic surfactants. Emollients are also known in common terms as moisturizers. The purpose of moisturizers is to maintain hydration or to rehydrate the skin. Moisturizers prevent water from evaporating from the skin by providing a protective coating. Dimethicone is a silicone-based spreader that aids in smoothing the compound. Methyl Paraben is a preservative. Retinyl Palmitate is a source of vitamin A and is known for stimulating cell growth in skin resulting in healing dry or irritated skin. Tocopheral Acetate is a source of vitamin "E". Vitamin E serves two purposes. First, it acts as an antioxidant to help preserve the compound and reduces damage to the skin when applied prior to exposure to UV light sources such as the sun. Glycerine is a skin softener.

Part "B" is a mixture of emollients, emulsifies, preservatives and anti-microbials. The further ingredients are primarily to stabilize the compound but also lend to the overall moisturizing affect of the coating system. Water, as in Part A, is used to bring the ingredients into solution. It acts synergistically with the other components to provide a source of moisture to the skin and control the overall percent solids of the compounds so that the desired amount of moisturizer are delivers to the skin when applied. Petrolatum is a petroleum-based emollient that traps moisture under the skin due to its hydrophobic nature. Propyl paraben acts synergistically with the methyl paraben in part A as a preservative. Stearic acid and lethicin is used as an emulsifier to assist the compound in staying in solution. Magnesium Ascorbyl phosphate is a source of vitamin "C" known for its whitening affect on the skin. It also acts to a lesser extent as an emollient within the system.

Part "C" is the carrier and film former of the system. Deionized or soft water is used to dilute the coating to the desired percent solids in order to control the amount of coating applied to the article. The base material is Witco 506 polyurethane dispersion. The Witco 506 is an aqueous, anionic, and aliphatic dispersion of polyurethane with a particle

size of less than 5 microns and an ultimate elongation of greater than 600%. The urethane is hydrophilic in nature.

A typical formula is outlined below:

Part A

Material	Amount
Water	34.6
Carbomer	0.5
C12-15 Alkyl Benzoate	5.0
Ceteareth 20	2.5
Cetyl Alcohol	2.5
Cetearyl alcohol	2.0
Dimethicone	0.5
Methyl Paraben	0.2
Retinyl Palmitate	0.01
Tocopheral Acetate	0.1
Cyclomethicone	0.5
Glycerine	2.0

To prepare Part A, the water is first heated to 70-75° C or 158-167° F. Then, the other ingredients listed in Part "A" are added to the heated water under steady agitation. Agitation is continued until all ingredients are dissolved or dispersed.

Part B

Material	Amount
Water	34.6
Petrolatum	5.0
Propyl paraben	0.1
Stearic Acid	0.5
Magnesium Ascorbyl Phosphate	0.1
Lethicin	0.25

To prepare Part B, water is heated to 70-75° C or 158-167° F. Then, the other ingredients listed in Part "B" are added to the heated water under steady agitation. Agitation is continued until all ingredients are dissolved or dispersed. Propyl paraben is propyl 4-hydroxybenzoate and is used as a preservative. Petrolatum is a colorless to yellowish-white hydrocarbon mixture obtained by fractional distillation of petroleum. In its jellylike semisolid form (known as petroleum jelly) it is used in preparing medicinal ointments and for lubrication. As a nearly colorless, highly refined liquid known as liquid petrolatum, liquid paraffin, or mineral oil, it is used as a lubricant, as a laxative, and as a base for nasal sprays.

Parts A and B are then slowly combined under constant agitation. The mixture is then permitted to cool to ambient temperature.

Part C

Material	Amount
Water	1000
Witco 506	80.0
Part A&B	5.0

Part C is prepared by adding Witco 506 to water under steady agitation at ambient temperature. Agitation is continued until all ingredients are dissolved or dispersed. Then, the previous mixture of Parts A and B is added to the Witco 506 and water mixture and stirred well until dispersed.

Part "A" is a mixture of emollients, lubricants, thickening agents, preservatives, antimicrobials, skin softeners, antioxidants and vitamin supplements. These ingredients act as the foundation of the moisturizing system. A thickener, preferably Carbomer, is added to help prevent the settling of other ingredients as they are added by changing the density of the water once the solution cools. Water, preferably deionized or soft water, is used to bring the ingredients in to solution by dissolving or dispersing the other ingredients. C12-C15 alkyl Benzoate, cyclomethicone and Ceteareth 20 act as emollients and lubricants. Cetearyl alcohol and Cetyl Alcohol are emollients and nonionic surfactants. Emollients are also known in common terms as moisturizers. The purpose of moisturizers is to maintain hydration or to rehydrate the skin. Moisturizers prevent water

from evaporating from the skin by providing a protective coating. Dimethicone is a silicone-based spreader that aids in smoothing the compound. Methyl Paraben is a preservative. Retinyl Palmitate is a source of vitamin A and is known for stimulating cell growth in skin resulting in healing dry or irritated skin. Tocopheral Acetate is a source of vitamin "E". Vitamin E serves two purposes. First, it acts as an antioxidant to help preserve the compound and reduces damage to the skin when applied prior to exposure to UV light sources such as the sun. Glycerine is a skin softener.

Part "B" is a mixture of emollients, emulsifies, preservatives and anti-microbials. The ingredients further primarily to stabilize the compound but lent to the overall moisturizing affect of the coating system. Water as in Part A is used to bring the ingredients into solution. It acts synergistically with the other components to provide a source of moisture to the skin and control the overall percent solids of the compounds to that the desired amount of moisturizer are delivers to the skin when applied. Petrolatum is a petroleum-based emollient that traps moisture under the skin due to its hydrophobic nature. Propyl paraben acts synergistically with the methyl paraben in part A as a preservative. Stearic acid and lethicin is used as an emulsifier to assist the compound in staying in solution. Magnesium Ascorbyl phosphate is a source of vitamin "C" known for its whitening affect on the skin. It also acts to a lesser extent as an emollient within the system.

Part "C" is the carrier and film former of the system. Deionized or soft water is used to dilute the coating to the desired percent solids in order to control the amount of coating applied to the article. The base material is Witco 506 polyurethane dispersion. The Witco 506 is an aqueous, anionic, and aliphatic dispersion of polyurethane with a particle size of less than 5 microns and an ultimate elongation of greater than 600%. The urethane is hydrophilic in nature.

The coating is applied to the glove by dipping and produces a pick up weight of approximately 0.6 grams. The coated glove is then placed in a forced air oven at a temperature of approximately 240° F ± 20° F. for a period of 36 minutes ± 8 minutes. The coating is dried onto the glove and forms an elastic film. This film has sufficient hardness to produce a coefficient of friction of less than 0.5 when measured kinetically on a bisque glass substrate.

When the film is hydrolyzed by a source of moisture, such as perspiration, the polyurethane film releases the emollients and other protective ingredients that then seal the affected area and prevent moisture from leaving the skin. The skin is further

supplemented by intimate contact with vitamin sources known to have healing effects when absorbed by the skin.

EXAMPLE 2

Preparation of an alternate coating formulations

The coating formulation of Example 1 is prepared using the same ingredients in the same proportions. However, the following polymers or elastomers are substituted for the Witco 506 polyurethane at equal parts.

Polymer/Elastomer	Material	Source
Tylac 68074	acrylonitrile	Dow Reichhold
Tylac 68073	acrylonitrile	Dow Reichhold
V-29	acrylic latex	Noveon
V-49	acrylic latex	Noveon
750 7 671	neoprene	DuPont

The coating is applied to the glove by tumbling. The coating is dried onto the glove in a tumbling dryer and forms an elastic film. This film has sufficient hardness to produce a coefficient of friction of less than 0.5 when measured kinetically on a bisque glass substrate.

EXAMPLE 3

The glove made in accordance with Example 1 above is tested for coefficient of friction measured kinetically on a bisque glass substrate. This test produces the following test results.

Sample	Relax	Tensile	Elong.	500%	Block	C.O.F.
Formula #1	60.8	3315	670	1106.5	.217	.3763

It should be understood, of course, that the foregoing relates only to certain disclosed embodiments of the present invention and that numerous modifications or alterations may be made therein without departing from the spirit and scope of the invention as set forth in the appended claims.